



# The I/O Connector

The Newsletter of the San Diego Atari Computer Enthusiasts

## PRESIDENT'S REPORT

First, I want to thank Bob Freedman for the fine demonstration he gave of Don't Ask's software. The PMGRAPHICS program was particularly impressive. From now on we will have a standby computer whenever we have software demos.

I will not be at the next meeting as I will be on vacation. Tony Tate will chair the meeting. If all goes well we will have the ATARI Video Tapes and a visit from Ron Mannos of Quintet. He will have a double density conversion for the 810 Drive to show. He also manufactures a disk label holder called DISK/baj which is pressure sensitive vinyl pocket that applies directly to the disk jacket and comes with a label card insert for listing files. You can list all the files on a disk with comments and file them with your disk. Seems like a handy device. We can purchase them on a group buy for 24 cents each. If you can't get to the meeting and want to buy some, call me and I will add your name to the list. They will be \$3 per package of 10 after next month.

ANALOG assures me that all people who subscribed on our group order will receive the #12 issue due out in two weeks. It has only taken them five (5) months to process our subscription. We did get our #11 disk subscription. It is now in the library.

We still need a larger meeting place. If any of you can help, please contact me. We also could use a program chairman.

Congratulations are due Don Perkins and Chuck Fowler for getting the bulletin board up and running. We now have two, count 'em, two Percom double density, double sided drives and two 810's on line.

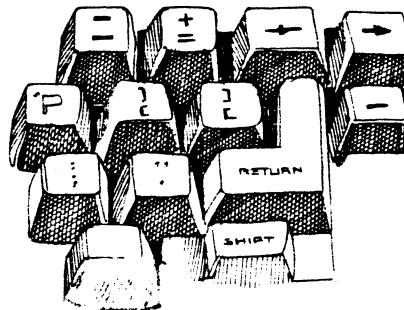
The Board decided to buy, on the approval of the club, two 19 or 21 in television sets if we can get a good buy on a pair. If any of you know of a good deal on the T.V.'s let me know. We need a larger screen for our demos.

The latest rumors from ATARI is that there will be a 600XL to replace the 400, a 800XL and a 1200XL. All will have expansion ports and look similar to the 1200XL. Also there is talk of a 1251XL with a 3.5 in disk drive. This column was written before CES, so look elsewhere in this issue for the official announcement. I will have pictures of CES at the July meeting. That's all for now

Have you seen a computer-related cartoon lately? Get your scissors.

Keep your eyes peeled for digital funnies. If you see something you like, share it with the rest of the club. Send it to the editor at the newsletter address. Thanks!

## EDITOR'S OUTPUT



How about that artwork, huh?

Not exactly the block busting issue that we had last month. According to corresponding newsletters, this is the time of the year when the quality of newsletters suffers somewhat. This is attributed to outside activities by officers and contributors. Everyone is busy with one or more projects.

Dick Hiatt, our frenetic, witty leader called me from Chicago this evening. He had just come from the Consumer Electronics Show and was full of good news about the new Atari lineup. Sounds like we'll be getting what we've been waiting for.

In view of the current equipment releases, the 1200XL must be seen in a completely new light. The browbeaten machine was merely a test of the marketplace response. We said "we like the basic design, but it doesn't do this, or that, . . ." Now it does this, that, and they fixed the other thing. Sorry to be so technical.

For those of you who really read this thing, we have the usual welcome input from our librarian, secretary, and pres. There's a piece on Atari BASIC and TAB, by Don Perkins, and also his second edition of Atari In The Office. The North-West group reports, there's the usual Calendar, and a quick BASIC program. Ron Miller is back through the magic of video tape with his Forth Avenue. Dr. George Zucconi, S.D.A.C.E. has submitted a helpful contribution concerning his current creation. Dependable Paul Caesar is back with tips on what and where to buy. There's a blurb downloaded from an unknown Atari BBS on the new machines: the new XL and XLD. Once again, you read it here first (or second if you've already read Antic). Perhaps you'll even learn some new words.

Enjoy. We do it all for you. But remember the words of Lao Tzu: "He who obtains has little; He who scatters has much."

## LIBRARIAN'S REPORT

Well here it is June already, and I haven't started my Christmas shopping yet. Oh well.

By the time you read this, I will have finally updated the other libraries. I'm sorry it has taken so long, but other things have been more important. We finally received the long awaited Analog disk as well as "The Best of '83" from our friends up in Oregon. Both of these disks will be incorporated into the libraries.

The Club's BBS has now been running for a little over a month with little or no problems. The problems that have cropped up seem to be due to users not logging off correctly, or not heeding the directions, or both. Possibly, at a future meeting, I will give a talk on how to use our BBS. For those that are new to the BBS, I would suggest copying the following files: NEWUSER, FUNC, HELP, and DIR to your printer. The DIR file lists all of the programs on the BBS, and their descriptions. I'd also like to thank Don Perkins for his invaluable help in getting the BBS reconfigured.

That's about it from my corner, 'till next meeting, Bye!

### SAN DIEGO ATARI COMPUTER ENTHUSIASTS

is an independent, nonprofit organization and user's group with no connection to ATARI Corporation, a Warner Communication Company. Membership fees are currently \$10.00 annually from January 1983 to January 1984. Membership includes free access to the computer program library, subscription to "The I/O Connector", and classes, when held. Permission to reprint articles in any noncommercial publication is permitted, without written authorization, as long as proper credit is given.

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SDACEBBS - 9 p.m. to 4 a.m.  
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#### SUBMISSIONS TO THE NEWSLETTER

are rare, because generally nobody gets up off their duff to sit down at the keyboard and produce ideas, opinions, reviews or anything of even the slightest interest to the group. When received, they cause the editor to turn inside out with happiness. Deadline is the 28th of the month. Thanks.

## SECRETARY'S REPORT

### MAY MEETING

5/16/83

Dick opened this rather problematic meeting at 6:50 pm by introducing the officers. Dick started to give the treasurer's report, but needed our new treasurer, Paul Caesar, to interpret it for him.

Library Report: The BBS is up! Call 447-8314 between 9:00 pm and 4:00 am on Monday thru Thursday.  
We also had reports from our various SIG's:

Kid SID: a new children's special interest group to be started soon...

Beginner's SIG: Still truckin'...  
Assembly Class: Those who have signed up should be contacted soon.

North County: Having more fun than ever...

North West County: Had our first meeting, hope to start growing soon.

Hardware Group: Had its first meeting. It will be a lecture series on microcomputer hardware.

Looks like a classy line-up. Support your favorite SIG!

Jim Marr made a motion that we change the meeting time to 7:00 pm. The vote went against the motion.

Our guest speaker was Bob Friedman & Co from DON'T ASK Software.

Despite a faulty 800, Bob was able to demo SAM, the Software Automated Mouth; SAM's New Knobs; Teletari, and the new PM Animator.

Most of you are familiar with SAM. His New Knobs will allow special pitch adjustments and other wonderful things. If you already have SAM, send in your disk with \$10 to DON'T ASK and they will send you the update. Also, there is a memory map for SAM available from Santa Cruz Software, the makers of the Tricky Tutorials.

Teletari is a new modern program that is fully programmable. For those of you who are connecting your ATARI to several different outside computers, this program will be a joy to have at \$39.95.

PM Animator is a brand new Player/Missile utility. It is truly amazing. It allows you to do VERY NICE real-time animation with BASIC. You HAVE to see a demo of it to appreciate what it can do. For \$34.95, all you graphic programmers out there should have a copy!

## ATARI UPDATE

### ALDA SIGNS WITH ATARI

Dick Hiatt, S.D.A.C.E.

CHICAGO— This evening, June 6, Atari Incorporated announced its new spokesperson for its outstanding new line of personal computing products.

Atari officials revealed that Mr. Alan Alda will introduce their state of the art equipment in a variety of media presentations.

Mr. Alda, of T.V.'s *M\*A\*S\*H* fame, was reportedly very excited to have reached an agreement with Atari.

This announcement is certain relief to those of us who assumed that Atari would retain Rodney Dangerfield as their spokesperson.

### Accessing Atari DOS Directory Using FORTH

The Atari DOS directory is contained in sectors 361 through 368 on each disk. Each sector has room for 8 file names and since there are 8 sectors, we can put a total of 64 files on one Atari disk. Each directory sector is divided into 16 byte records (8 records per sector) and each of those records is divided up as follows:

**Byte 1: Flag Byte.**  
 Bit 7 = 1 if this file has been deleted.  
 Bit 6 = 1 if this file is in use.  
 Bit 5 = 1 if this file is locked.  
 Bit 0 = 1 if this file is OPEN.

**Byte 2,3: Sector count.** This contains the count of number of data sectors in this file.

**Byte 4,5: Starting sector.** This is the sector number of where this file begins.

**Byte 6,16: File name.** Contains filename and extension.

This FORTH program will read the DOS directory and show you what it contains. The flag byte is displayed in binary so you can see each bit. You will see that even deleted files are displayed. After you type in this program and LOAD it you can examine any Atari disk by typing DIR. If you look at DIR in the program, you will see that it gets sectors 361 to 368 and pulls the 8 records out of each for printing. HEAD prints the heading. The heading DUL....0 stands for deleted?, in use?, locked?, ...., OPEN?. The test GOOD\_ENTRY? compares (AND's) the flag byte with binary 11111111 and if the result is zero this file record will be skipped. You can change the number 255 to something else to mask off what ever you like.

You will notice this program produces some junk printing after reading the last directory sector. This is due to a bug in FIG FORTH 1.1. We are anxiously waiting for Chuck Fowler to get version 1.4, which should fix many of our problems.

The next step after reading the DOS directory will be to read any files on disk. It would be nice to do this because there are some neat data files in Atari DOS format that would be fun to get a hold of using FORTH. This is what I will eventually do. Also, I have seen some FORTH Atari DOS reading programs that are much more compact than the one you have here. But many of our new FORTH programmers would have trouble figuring out how these compact programs worked.

```
( ATARI DOS DIR COMMAND )
@ VARIABLE SECT_ADDR

: GET_SECTOR ( SECT# ON STACK )
  BLOCK SECT_ADDR ! ;

: PRINT_TOTAL_SECTS ( A -- A )
  CR DUP 1+ @
  3 .R 4 SPACES ;

: PRINT_START_SECT ( A -- A )
  DUP 3 + @
  3 .R 4 SPACES ;
```

```
: BINARY 2 BASE ! ;

: GOOD_ENTRY? ( A -- A )
  DUP C@ 255 AND ;

: PRINT_FILENAME ( A -- A )
  DUP 5 +
  11 @ DO
    DUP I + C@ EMIT
  LOOP
  DROP ;

: PRINT_BYTE_FLAG ( A --- )
  C@ BINARY 9 .R
  DECIMAL ;

: PRINT_FILE_RECORD ( N --- )
  16 * SECT_ADDR @ +
  GOOD_ENTRY?
  IF
    PRINT_TOTAL_SECTS
    PRINT_START_SECT
    PRINT_FILENAME
    PRINT_BYTE_FLAG
  ELSE
    DROP
  THEN ;

: HEAD ( --- )
  CR CR
  ." TOTAL" 2 SPACES
  ." START" 2 SPACES
  ." FILENAME" 4 SPACES
  ." DUL....0" ;
```

```
: DIR ( --- )
  369 361 DO
  HEAD
  I GET_SECTOR
  8 @ DO
    I PRINT_FILE_RECORD
  LOOP
  CR ;
```

## NORTH-WEST COUNTY DATA

Infotainment Computers, 257-6 N. El Camino Real, Encinitas again hosted the North-West County A.C.E. Group. Ed Vergara, General Manager, has offered the continued use of his training room for the meetings.

Carey Holzman and Tim Rios brought systems. Brian Ritter discussed FORTH. Jim Gollwitzer brought the NE Group library.

Special thanks to Jim Lawson. Jim phoned prospective NW Group members to remind us of the May 14 meeting. Jim has done an excellent job of keeping the group going after Tom Bennett got it started and then moved out of the area. Rick Reichert (727-6566) of Vista will act as new group leader.

Future North West Group meetings will be held on the second Saturday of the month: June 11, July 9, August 13. (Please note that the notice in the May I/O Connector has the wrong dates.) Meeting begins at 9:00 a.m. sharp!

-Rick Reichert

# SPECIAL REPORT

## MEDATARI

What would you give for a book that turned its own pages to immediately find the information wanted, or a book that dissolved away all the words to reveal only the answer to a question? Truly, a sorcerer's tool. But we are in the information age. We'll run out of trees before we can get it all down on paper. Ink and paper will soon go the way of the parchment and quill. Books will be lovingly wrapped in rich leathers and sentimentally treasured as antiquities, but they will not be found in libraries.

The Drexon Laser Card is just now being released on the market by Drexler Technology Corporation located in (where else) California. The size of a credit card, the Laser Card has a mass storage capacity of two megabytes, and the company expects the capacity to go up to 10 megabytes. No, I'm not mistaken, and yes, that's the capacity of a very healthy hard disk computer memory. Two books of about 300 pages each could be contained in one megabyte of storage. It doesn't take much imagination to realize what this kind of technology will lead to.

Data and information is multiplying at a staggering rate, but no one has found a way to add more RAM to the brain to handle it all. The trick will depend on search and seizure. Access is the key. The computer has the ability to find and retrieve a mass of stored information. No longer the exclusive tool in the hands of a few, it's power has been released like the genie in the bottle, just waiting to grant us the wishes we command.

But because he is recalcitrant, one has to learn to ply the genie before he will obey. Only one, or a few people have to learn how, and then those individuals can tell the others. That is the beauty of putting so many people in touch with computers. merely by increasing the numbers, a critical mass will be attained, similar to a fission reaction, where an explosion or breakthrough in learning is inevitable. Each new kernel of knowledge will lead to another, building on the impetus of the one before it, all multiplying exponentially and cascading like a chain reaction.

Those of you who have been with SDACE for some time have seen this idea at work. Someone learns how to tweak the genie, and tells the others. A hundred Lilliputians can pin down a Gulliver, but if only one or two try, they will find it a Herculean task. A concerted effort and sharing of knowledge is necessary.

This concept has long been the tradition on my profession, the practice of medicine. Scientific progress would be non-existent without the free dissemination of discoveries and information. Following in this tradition, I would like to share some efforts I have made towards attempting to make my computer behave like the genie.

Perhaps the most important task a physician performs is teaching. The title "doctor" originates from the Latin word for teacher. To assist me in this function, I've installed a small inexpensive computer in my waiting room for the use of my patients.

The computer is an Atari 400 with 16K memory. It's rugged construction and membrane keyboard make it well suited for exposure to one and all. The programs I have developed for it stem from the questions I am most frequently asked by patients in my obstetrical-gynecological practice.

One program elicits symptoms concerning abnormal uterine bleeding. According the response given by the user, it will arrive at a conclusion as to the seriousness of the condition, and will make recommendations as to what course of action should be taken.

The program may be used in different ways, but its diagnostic nature is perhaps the most frequent application. Unlike all-inclusive lists of symptoms, the patient does not have to pick out her particular symptoms from a multitude of non-applicable ones. The program is structured so that every response by the patient will eliminate her being asked any questions precluded by all previous responses.

Another way the program can be used is for a person to elicit information about different types of situations that

cause abnormal uterine bleeding. This allows the individual to learn about various types of uterine bleeding or to compare her knowledge of these symptoms with the correct answers.

The other program is somewhat different in nature. It contains information about different methods of birth control. The first screen is a graphic display of the effectiveness of the various methods. From there the user is presented with a series of nested menus that allow branching to the topic of her choice. One can go backwards to return to a previous menu or go forward to progress through the menus.

There is also a provision to bypass the menus and just traverse right through all the information from beginning to end. This variety of choices permits the user freedom to select as much or as little information as she wants. The program does not rigidly steer the user through a tunnel with only one entrance and a single exit predetermined by the programmer.

While written for Atari Basic, they should be easily adaptable to other computers and other Basic dialects. Some alternate uses may include a teaching or learning use in a health education course or a woman's clinic. The driver or shell of the program does not necessarily have to be limited to a gynecological or medical topic. The structure of the program can remain intact while the menus and prompts can be changed to any other subject with appropriate responses and answers.

In keeping with the concept of sharing efforts and results, I would like to make these programs available to anyone with a need or interest. If you are an educator or physician that would like to use these programs, or if you are interested in using their structure or developing it further, feel free to contact me. The programs can be made available on cassette tape for the Atari, and will be free of charge except for \$1.00 to cover the cost of the cassette. The programs are copyrighted, and although you have license to use them, they may not be sold for remuneration.

One or the other of these programs will always be running on the computer in my office. Feel free to drop by on weekdays between 9-12 or 2-5 to use them. If picking up a copy, please call ahead of time to make sure that one is available. A copy can be forwarded by mail if you send me a postpaid mailer. In return, I would like some feedback on how the programs are received in your particular application, including any criticisms on your part or from the user. News of any modifications or improvements will be welcomed.

George R. Zucconi, M.D.  
7808 El Cajon Blvd., Suite 8  
La Mesa, CA 92041  
(619) 463-4457

*Editor's Note: In conversation with President Dick Hiatt, it has been suggested that Dr. Zucconi's programs be added to the SDACE library.*

## RUN THIS

Looking for a simple text editor? If you have a disc drive, try this.

Go to DOS, then choose C (for Copy), and when prompted for Copy "from, to", answer E:,D:TEXTFILE or any other filename you desire. You can edit a line until you press return, then this is the file. To end input, press CTRL-Z. To view your file from DOS, type C, then answer the prompt with D:TEXTFILE, E:. Use CTRL-I to stop the listing temporarily. Use CTRL-I again to start it. If you have typed in a BASIC program you can ENTER D:TEXTFILE from BASIC. In any case, you can print the file to the screen with:

```
10 OPEN #3,4,0, "D:TEXTFILE":OPEN #2,8,0,"E":DIM A$(255)
:TRAP 30
20 INPUT #3,A$:PRINT #2; A$:GOTO 20
30 END
```

Change the E: in line 10 to P: to print.

**Paul Caesar's  
BEST BUYS**

The first day of summer will arrive shortly after you read this (unless you're in the southern hemisphere!). I'm trying to figure a way to use my computer and enjoy the sun at the same time. If I figure it out, I'll let you know - if you figure it out, let me know.

Rebates are popular with many manufacturers including Atari. Through September, Atari is offering rebates on all of their computers. There is a \$50 rebate on the 400, a \$100 rebate on the 800, and a \$200 rebate on the 1200. The way Atari's are priced now, you should be able to spend (after rebate) about \$100 for a 400, \$399 or less for an 800, and about \$549 for a 1200. When I think of the price I paid for my 800 eighteen months ago, I could cry. But in the meantime, I have learned more than I thought possible about computers, disk drives, Basic, machine language, word processors, file managers, etc. My advice to anyone waiting to buy a computer is "Don't Wait!" Even if you save a few dollars by waiting another six months, you will fall that far behind in learning about the fascinating world of computing. I have no regrets about jumping in when I did.

More stores are carrying a larger line of Atari related software. Pacific Stereo has new displays with more selection of software. The Federated Group has a wall display of Atari software. Sears has new computer departments with Atari hardware and software. The Broadway has more selection in Atari related software. The largest selections of software continue to be at - Dimensional Software, Software Centre, and Software Only. If you need to order software that's unavailable, it has been my experience that a wait of a few weeks is not unusual and a wait of two months is not unheard of. If a dealer wants a deposit to order software, it is a good idea to find out whether you can get a refund if there is a long delay or a price increase. I have never had a problem with any store on the list, but I have heard some negative comments from others. As with any business dealings, make sure you know

what you're buying and what the terms are before you spend your hard earned cash. If anyone has good or bad comments about local stores, I would be grateful to know about them.

Consumer Computer is getting out of the Atari business and may still have some bargains when this reaches you. If not, the daily paper is still your best fresh source of bargain news. The computer retail business is changing daily and I don't expect "stability" for about two years.

Enjoy summer, computing, and any other nice thing that comes your way. If you find a new Atari place, let me know. Paul Caesar, 377 Fashion Valley, San Diego 92108.

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A 5-83

## SPECIAL REPORT

### THE ATARI 1400XL, 1450XLD 800XL AND 600XL HOME COMPUTERS

Hot off the wire: Atari has just introduced two new top-of-the-line home computers and two upgraded standards. Both the Atari 1400XL and the Atari 1450XLD come with a built-in speech synthesizer and a direct-connect modem in addition to the advanced features found in other Atari XL series computers -- a powerful 64K RAM, built-in Atari BASIC programming language, an external processor bus for future expansion, true typewriter-style keyboard, and advanced sound and graphics capabilities. An additional bonus with the Atari 1400XL series is the on-board speech synthesizer, which can be programmed to generate phonemes (the individual sounds of spoken language) directly, or to "translate" from text.

A top of the line entry, the Atari 1450XLD incorporates a dual-density, double-sided disk drive in the same compact package, eliminating the need for a separate disk drive and interconnecting cables. The dual-density format allows up to 127K bytes (about 100 typed pages of information) to be stored on each side of the diskette.

The new Atari 600XL Home Computer is a light-weight machine, about half the size of its hardware sibling, the Atari 1200XL, and sells for under \$200.

New owners can gradually work their way up, building a complete computer system as their budget and needs allow.

With its standard 16K RAM and built-in Atari BASIC, the Atari 600XL has sufficient memory for the classic Atari Computer games and useful computing tasks. Advanced

software such as VisiCalc or the Atari Bookkeeper program that require at least 32K RAM can also be used on this machine because the Atari 600XL has been designed to expand with the addition of a 48K Memory Expansion Module, available from Atari Retailers by early fall. This module can expand the Atari 600XL Computer's capacity to a powerful 64K RAM!

The Memory Expansion Module plugs into the parallel interface port, conveniently placed on the Atari 600XL Computer's back panel. A new feature on all Atari XL Computers, the parallel interface port, allows users to connect a wider variety of advanced peripherals to their systems for special applications.

The low-profile keyboard is easy to master, with a layout similar to that of the Atari 800. A major improvement is that the control keys -- OPTION, SELECT, RESET, and START -- and the new HELP key are set flush in an appealing metallic band on the right side of the keyboard. The single cartridge slot is centrally placed above the keyboard so program cartridges can be inserted or removed while the computer is on without disrupting its operation.

Because it's compatible with most Atari hardware, the new Atari 600XL owner will have access to the large library of Atari software.

The Atari 800XL brings you all the essential features of the Atari 600XL: built-in BASIC, a true typewriter-style keyboard, a HELP key, and an international character set. And, with a 64K of memory the Atari 800 XL can operate as a full-featured home computer system.

It's really comforting to see Atari back in the action again with equipment that is truly competitive in the 1983 computer market. A-turkey it's not!

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# CALENDAR

What: San Diego Atari Computer Enthusiasts Monthly Meeting

When: 6:30 p.m.  
3rd Monday of each month

- May 16, June 20, July 18, August 15

Where: North Park Recreational Center  
4044 Idaho Street  
Social Room

Contact: Dick Hiatt, 463-8460 evenings.

What: North County A.C.E.

When: 6:00 p.m.  
3rd Tuesday of each month

- May 17, June 21, July 19, August 16

Where: 8081 Mira Mesa Blvd.  
(Church across street and west of Mira Mesa Cinemas.)

Contact: Ron Miller, 748-7195

What: North-West County A.C.E.  
Monthly Meeting

When: 9:00 a.m.  
2nd Saturday of each month

- June 11, July 9, August 13

Where: Infotainment Computers

Contact: Rick Reichert, 727-6566

## BASIC BASICS

By Dan Perkins - S.D.A.C.E.

This month I am going to talk about the TAB(x) function. As many of you have probably found out, Atari BASIC does not have a TAB(x) statement. This has caused much frustration for those of us who are trying to convert programs from another computer.

What TAB normally does, is to take a number inside the parentheses and move the cursor to that position on the screen, similar to our POSITION x,y. But notice, the TAB(x) moves the cursor along the same line. This means that to use POSITION for the TAB(x), we would have to know the vertical position of the cursor. Location 84 in memory holds the vertical position of the cursor, which means we could use a complicated statement like:

POSITION 5,PEEK(84)

to do a TAB(5). But, why do that?

If there is a location for the vertical position, shouldn't there be one for the horizontal one? Yep, there is! Location 85. Now watch the fun: If we put a value into

location 85, and not 84, then the cursor will stay on the same line and be moved to the new horizontal position in 85. Now we get this:

:POKE 85,5

Which will do the same thing as a TAB(5).

One thing to note:

Most statements using TAB(x) look something like this:

? QUAN;TAB(6);PRICE;TAB(17);QUAN\*PRICE

We can't have a POKE as part of a PRINT statement like that, so we will modify our command to:

:POKE 85,6:?

and put it into the above statement: ? QUAN;:POKE 85,6:?:PRICE;:POKE 85,17: ?QUAN\*PRICE

## SPECIAL REPORT

Atari in the Office, part 2

Money. We use it in business every day. It's the main reason that offices exist. And how do we like to see money written down? Like this?

\$3.4  
\$6257  
\$527.341  
\$1

Or like this:

\$ 3.40  
\$ 6257.00  
\$ 527.34  
\$ 1.00

I think you will agree that the second is the proper format for monetary output. But Atari BASIC doesn't have a nice PRINT USING statement. So how does a business man get his numbers right? He uses a subroutine like the one at the end of this article.

To use the subroutine, you must DIMension TEMP\$ to ten characters.

( DIM TEMP\$(10))

When you want a formatted number, you place the value in TEMP, then GOSUB 32100, and then print out TEMP\$. For example:

TEMP=PRICE:GOSUB 32100:? TEMP\$

This will take the number in price and print it out in a nice right-justified, dollar format.

```
32100 TEMP$=" 0.00":IF TEMP=0 THEN RETURN
32102 T2=ABS(TEMP):T2=INT(T2*100+0.5)/100:IF TEMP<0 THE
N TEMP=-T2:GOTO 32104
32103 TEMP=T2
32104 IF T2<1 THEN TEMP$(7-(TEMP<0),10)=STR$(TEMP):RETU
RN
32105 TEMP$(7,10)=STR$(T2-INT(T2))
32108 TEMP$(8-(LEN(STR$(INT(T2)))+(TEMP<0)),7)=STR$(INT
(T2)*SGN(TEMP))
32110 RETURN
```

Next Month: More Disk I/O and an Addressing Program.

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## ETC.

### HAVE YOU HEARD?

New ideas often spring from the use of new technologies. New ideas in turn can give birth to new forms of expression. So it is with the New Technology.

HIGH TOUCH is an antonym for high tech. As high tech suggests the mechanical, cold, and inorganic side of progress, High Touch denotes a concern and emphasis on the human, emotional, and spiritual side of progress.

USER FRIENDLY is a term with which most of us are probably familiar. When human interaction with a computer or computer program is easy and unhindered, the machine or software is said to be User Friendly.

INTERFACE has been around for quite some time, but has recently taken on a fresh meaning with respect to data processing.

A glossy new computer term is CONNECTIVITY. This is the characteristic of one data unit to connect with and exchange information with other units, even those of other companies.

A phrase which has moved out of the computer area into general use is CORE-DUMP. For example, people Core-Dump; they give everything they know on a subject in unsorted bits and pieces.

These days, who doesn't demand INPUT? And any project underway, not just a computer program is said to be ON-LINE.

GIGO, a computer term meaning Garbage In, Garbage Out, was once applied only to poor programming. Now it is attached to any poorly planned endeavor.

As more and more communicators use electronic work stations, they observe that an unused program stops working after enough time has passed (and the human user has forgotten how to talk to the program). The clever term used to describe this situation is SOFTWARE ROT.

## The I/O Connector

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### OUR NEXT MEETING,

JUNE 20, 1983  
6:30 P.M.

North Park Recreation Center  
4044 Idaho Street  
Social Room

TO:

STEVE LAWRENCE  
8924 DUNCAN RD.  
SAN DIEGO, CA  
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